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Portsmouth Corporation Tramways 1896–1936

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Cover:
Opening of the Festing Road Extension, 31 July 1913 – the Mayor, Alderman Corke, who was also Chairman of the Tramways Committee, driving Car no 66

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PORTSMOUTH CORPORATION TRAMWAYS 1896–1936

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Introduction

Electric tram cars ran in Portsmouth from 1901 until 1936. Although 36 years is a short time in the history of the city, during the 'tram period' they provided a memorable contribution to life in Portsmouth. In some respects the Portsmouth system was typical and in others, unique. The geography of the routes was certainly unusual, for almost all the route mileage was confined to an island approximating to the shape of a pear. Partly for military reasons, until 1942 only one permanent road bridge linked the island to the mainland.

In many towns, tramway systems radiated from a centre, such as the Pier Head in Liverpool, or the Tramways Centre in Bristol. There was no clearly dominant centre in Portsmouth. In the south-west of the island, there was the Dockyard, the Commercial Road shopping centre and the ferry terminals. But there were other traffic nodes such as Southsea, with its shops and piers. Beyond the municipal boundary, connection was made with a company owned line, which followed the main London road out to Horndean. Another special feature of the Portsmouth system was its own electric power station, independent of the municipal supply. However the historical pattern of a corporation taking over horse tramways from a private company and electrifying them is typical. Again, the end of the trams, ousted by trolleybuses, occurred in many other towns and cities in Britain in the 1930s. Also typical is the way in which electric tram cars contributed to the life of the city during the first three decades of the twentieth century.

History 1896–1936

Horse trams 1865–1903

Urban public transport in Portsmouth began in 1840, when an independent operator put on a horse bus service between Southsea and North End via the Dockyard and Commercial Road.[1] Rails were laid in the road after the authorisation of the first horse tram service in 1863. This was inaugurated between what was then the only railway station in the town and Clarence Pier in 1865. While local passengers were not debarred, the service was intended mainly for through passengers to the Isle of Wight. However, when the Portsmouth Street Tramway Company opened their first route in Portsmouth in 1873, local traffic was envisaged. By 1880, the Provincial company had a controlling interest in all the Portsmouth tramways, operating about six route miles, served by cars running at five minute intervals.[2] In 1892, the horse tramway system reached its maximum extent, with 58 cars and 249 horses operating over 14 route miles. They were complemented by horse bus services, which usually started later than the trams – in many cases, not until 8.30 a.m. – finished earlier, and ran less frequently. Their fares tended to be higher and their passengers were usually from the higher income groups. The last horse drawn tram car ran in 1903 and the last horse bus services, from Copnor to the Guildhall, and from Goldsmith Avenue to the Dockyard were withdrawn in 1920.[3]

Electrification and the Municipal Takeover 1896–1905

Mainly because the rails were laid in the streets and the trams served local communities, a municipal interest was always recognised. All the tramways in Portsmouth, except the original line from the Town Station to Clarence Pier, had been built with powers granted under the Tramways Act of 1870, which gave local authorities the right to acquire tramways after 21 years. Under this legislation, Portsmouth Corporation was empowered to take over all the horse tramways except those which had operated for less than 21 years, the Landport to Clarence Pier section because it had its own Act of Parliament, and the section beyond the then borough boundary – from the *Green Posts* at Hilsea to Cosham.

In the 1890s there was a movement in favour of municipal control of services and utilities, including the supply of water, gas and electricity, and of public transport. At the same time, electric power had been successfully applied to street tramways, and the provision of an electricity supply and the takeover and electrification of the tramways had been linked in many towns. Municipalisation, as compared to nationalisation, was not usually a political 'hot potato', political allegiance often being tempered by local patriotism. This was certainly the case in Portsmouth where there was no effective opposition by any member of Council to the proposals to take over the tramways.[4] These were formulated by a Tramways Committee, first convened in 1896 under the chairmanship of Alderman Ellis, who was also Chairman of the Electric Light Committee. There were extended negotiations with the tram company, who were usually represented by Mr A. W. White. At one stage, the possibility of the Corporation purchasing the tramways and leasing them back to the Company was considered, and rejected. Finally, the Bill authorising the 'takeover' was deposited in December 1897 and received the Royal Assent in the following year.[5]

Having decided to operate the Portsmouth tramways, the Committee had to make a number of technical decisions. For instance, to carry the heavier electric cars, the rails had to be replaced, and there was a possibility of changing the track gauge. Electrification was assumed, but alternative systems, such as surface contact with studs, or overhead live wire, were considered. A number of undertakings provided information, but in four instances the

Committee visited other systems. At their meeting in February 1899, a Report was given following their visits to Dover, Rouen, Willesden and Paris.[6] The result of their deliberations was to settle on the overhead live wire system for feeding electric power to the cars, and to relay the track to the existing gauge of 4 ft. $7\frac{3}{4}$ ins. In most towns, the electricity supply for the tramway was drawn from a municipal power station, but in Portsmouth, the Tramways Committee decided to operate their own generating plant.

In 1899, E. Rotter, who had been working for Dick, Kerr and Co. on the cable operated tramways in Edinburgh, was appointed Manager and Engineer, in anticipation of the acquisition of an undertaking for him to manage.[7] The Tramways Committee had hoped to take over from the Company at midnight on the last day of 1899, but upset the proceedings by announcing that they only wanted the tramways, and not the associated horse buses, and the carriages for weddings and funerals operated by the Company. The final agreement reached with the Company left the buses and carriages with them and also included provision for Corporation involvement in the Portsdown and Horndean Light Railway, which the Company were promoting. The ownership of the horse tramway system passed from the Company to the Corporation at midnight on 31 December 1900. A formal ceremony, in the very early hours of 1901, was attended by the Mayor, Alderman Emmanuel, the Chairman of the Tramways Committee, Councillor Kimber, who had succeeded Alderman Ellis, together with the Town Clerk, the Manager and Engineer, and officials of the Company.

In July 1901 a trial run, using power from the Committee's generating station, proved successful. The Board of Trade were notified that the Committee were ready to open the first section of their new electric system to the public, as soon as the statutory inspection had taken place. This was carried out in August, and by early September, passengers could have the experience of electric traction. The opening ceremony was fixed for 19 September, but in view of the death of the President of the United States, it was delayed until 21 September 1901. Perhaps influenced by the custom of the feminine launching of ships, the Committee asked Mrs Kimber, the wife of the Chairman, to inaugurate electric traction in Portsmouth. Under careful supervision, she drove Car No. 1 heavily laden with flags, banners, civic dignitaries and their relations. Mrs Corke, the wife of the Vice-Chairman, also with appropriate guidance, started the engines in the generating station.[8] In October, the sale of the horses commenced.[9] By the end of 1901, virtually all the horse tramway system had been converted, except for four short lengths, three of which had been abandoned previously.[10] In addition, five new sections were opened.[11] As a temporary measure, horse cars were operated on some of the converted routes, but this arrangement was short-lived, except between Hilsea Lines and Cosham. Horse cars operated on this route until 1903 because of problems with the two bridges.

Two independent companies were authorised to build extensions to the Corporation system. The Portsdown and Horndean Light Railway was constructed by the Provincial group, who had formerly owned and operated the Portsmouth Tramways. This was opened from a junction with the Corporation system from a point south of the Corporation terminus at Cosham Level Crossing out to Horndean in 1903. The Agreement of 1900 included an arrangement by which the Corporation cars were diverted from the terminus at Cosham Level Crossing and ran over the Horndean route as far as an exchange platform near the fairground site on Portsdown Hill. What was in effect, a toll, was paid by the Corporation of a farthing for every passenger carried as far as the bridge over the railway at Cosham, and one halfpenny for those carried beyond. The Corporation provided the electric power for the Horndean route from the tramways power station at Fratton. The other project was for a line from Eastney, crossing by a suspension bridge to Hayling Island.[12] The Committee decided to build a line from their terminus near the *Highland Chief* at Eastney as far as the borough boundary near Eastney Pumping Station to connect with it. In the event, neither the Hayling Island line nor the connection to be constructed by the Corporation materialised.

Mr Rotter, the Portsmouth Manager and Engineer was invited to act as engineer for the Portsdown and Horndean line. An arrangement was reached by which he accepted this appointment, but remained as consulting engineer for the Portsmouth system. In view of this, in 1902 Mr W. R. Spaven was appointed as Manager of the Corporation tramways and Mr W. G. Lironi became the Engineer. Most of the horse tramway staff transferred to the electric system, but there were some redundancies of those particularly concerned with horse keeping. It was planned to replace the various horse car establishments with a large new depot, with offices and workshops on the site of the old premises in Gladys Avenue, North End. This was not ready when the first electric cars arrived in 1901, and for a while they were stored in the open. Until the strengthening of Portsbridge enabled the electric cars to take over between Hilsea and Cosham, the depot at Rudmore continued to provide horse cars. This arrangement ended in 1903, when it was resolved to reduce the staff at Rudmore, while keeping five horses and two cars in reserve.[13] The various relics of the horse period gradually disappeared. A plan to use horse cars as trailers failed to win the approval of the Board of Trade, so apart from four, which were

converted for electric power, they were sold for scrap or use as sheds.[14] The various horse tram depots, including those at Broad Street, Ordnance Row and Buckland were leased or sold.[15]

The new cars, with their electric lights and greater speed were welcomed. Trials were conducted with a covered top car, but it was decided that the additional expense of covering the upper decks was not justified. The Committee considered many matters of detail. For instance, somewhat inexplicably, they decided against notices asking passengers not to spit, but approved those prohibiting bad language.[16] In 1908, they discontinued advertisements for intoxicating liquor on the backs of tickets, and in 1909 permitted the display of notices for a matinee performance for the benefit of veterans who had served in the Crimean War. There were occasional behavioural problems, particularly in the late evening. In 1904, following the complaints of disorderly behaviour by members of the Royal Marine Artillery, conductors were authorised to allow patrols to board the cars.[17] Even junior members of the officer class sometimes misbehaved. In 1906, three officers were reported to the Commander-in-Chief for tampering with destination lights.[18] Courtesy calls usually involved the Committee in providing special services. For instance, in 1905, cars were decorated for a visit by the French Fleet and in 1906, a similar courtesy was extended to the Japanese.[19] The poles that supported the overhead wires were decorated for the coronation of King Edward VII in 1902.

Although tramway passengers welcomed the improved service, not everybody was pleased. Normally the space between the rails was filled by granite setts, but in favoured locations noise levels were reduced by the substitution of Jarrah wood blocks. The Revd Guy Langdon complained that the wood paving had not been carried far enough to prevent the noise of passing vehicles being audible in his church.[20] Accidents, which had occurred with the horse cars, continued to happen. For instance a boy named Price, was killed by a car on 29 August 1903. His father asked for assistance with the burial expenses, but was told by the Committee that although they regretted the occurrence, no funds were available.[21] The electric cars sometimes upset horses. The Committee considered a claim from Mr Baker, whose horse bolted on seeing a car in Lake Road.[22] On 12 December 1905, for the first time ever, a tram car damaged a motor car in Osborne Road.[23]

By 1905, the municipal electric tramway system of Portsmouth was established. It consisted of 28 miles of double track, some of which was interlaced, and half a mile of single track. The sharpest curve was of 35 ft radius, but there were few gradients – the maximum was a 1 in 17 inclination on an approach to a railway bridge. With 84 cars, the number of miles run on an average day was 5,208, during which 49,875 passengers were carried.[24] The cost of conversion had been £359,900 of which the new track and overhead live wire accounted for £221,000, the new cars had cost £48,000, the tramways power station £41,000 and the North End Depot £30,000, while miscellaneous expenses including legal costs, accounted for £19,000.[25] The only asset about which doubt could be expressed was the separate power station.

The Portsmouth Electric Tramway System 1905–1914

The diversion of the cars from the Corporation terminal at Cosham Level Crossing to an isolated platform on Portsdown Hill, reached over the track of the Light Railway, was not a success. Very few passengers were carried, and, in 1907, it was decided to reinstate the terminal at the level crossing. The withdrawal of the Corporation cars was not unconnected with disagreements over the charge to the Portsdown and Horndean Company for electricity. In the financial year 1904/5, the Company was charged £5,564 8*s*. 2*d*. for electricity which, it was claimed, cost £1,964 to generate. However, this seems to overlook the capital charges which the Corporation might reasonably have expected to recoup. In 1907, the Company introduced their own generating plant into the sub-station at Purbrook, and produced all the electricity needed to operate their line until 1916.[26]

Of more significance than this minor diversion, was the opening of four new sections of line. First, in 1909, tracks were laid along Goldsmith Avenue to Milton, serving Fratton Park Football Ground. Second, in 1913, three new sections were opened, and apart from minor developments, the Portsmouth system reached its maximum extent. The line from Stamshaw ran along Twyford Avenue to Alexandra Park. Two sections, one from Milton to Eastney and the other along Festing Road to the South Parade Pier linked existing terminals, making new routes possible.

Complaints were made about the average speed of the Portsmouth cars, which was appreciably less than the 16 m.p.h. average reached on some systems. One of the reasons for this was Mr Spaven's stress on the importance of having schedules which enabled passengers to transfer between routes. Because of the unusual form of the Portsmouth network this was particularly significant. Another factor was the number of sharp curves, and also the tendency of Portsmouth passengers not to hurry. Mr Spaven claimed that, 'If passengers would board or leave the cars as quickly as possible, and not have so much Goodbye saying and hand shaking with friends when the cars stop, an improvement could be effected, which would not only expedite our Service, but be much appreciated by

others who use the cars besides greatly facilitating the work of our Motormen and Conductors. Friends who have visited us have repeatedly remarked about the dilatory way that the people get into and out of the cars in Portsmouth'.[27] On the other hand, there were expressions of satisfaction. Mr Spaven reported that 'Visitors to Portsmouth speak well of our Car Services and a Medical Gentleman, residing in Southsea, assured me only a few days ago that the services were such as to render it unnecessary for him to keep his own mode of transit, as he could get to all parts of the Borough with ease'.[28] The timetable was designed to ensure that irrespective of which route was used, a passenger would never have to wait for more than ten minutes and that virtually any part of the borough could be reached with not more than one change of car. Very few houses were more than half a mile from a car stopping place.

Some of the services were linear, such as that from the Clarence Pier via Commercial Road and North End to Cosham, sometimes known as the Main Line, and earning the highest revenue per car mile of any route. Others were circular, such as North End to North End via Fawcett Road, Osborne Road and Commercial Road. Certain routes which would have been desirable for convenience of operation, were precluded by the social incompatibility of the districts involved – 'some districts would have to be connected with less favourable or less attractive places than those of their neighbouring districts'.[29] There is no evidence of the Committee varying the fares to suit the district. Fares were either 1*d*. or 2*d*., apart from the long journey from South Parade Pier to Cosham which was 4*d*. before the First World War. Unlike the London County Council, Portsmouth does not seem to have used its tramway system as an instrument for social planning. There were however, special fares for workpeople at 1*d*. single or 2*d*. return.

In 1909, it was resolved to place letter boxes on two cars operating from each of six terminals – Cosham, Copnor, Portsea, Eastney, South Parade Pier and Milton – to the Town Hall between 10 and 11 p.m., thus giving a later last post to those living on tram routes. This was to be tried for a three month trial period, but there is no record of it becoming permanent.[30] Most of the items considered by the Tramways Committee were not of fundamental importance. For instance, in October 1909, they received a complaint that the conductors were failing to call out the names of the stopping places. Of greater interest to the staff was the decision reached in 1910 that in the future, motormen and conductors were to have six days holiday leave every year. By 1911, fairly reliable motor buses were available, but it was decided that operating buses to supplement the electric cars would serve no useful purpose.[31] Some passengers tended to throw used tickets on to the floors, so in 1912, as an experiment, boxes for used tickets were installed on the cars serving one route.

Nineteen-thirteen was notable for the opening of three new sections. Early in 1914, the Committee dealt with what was perhaps the last relic of the horse tram days. It will be recalled that in 1903 it was decided to retain five horses. One of their duties had been to draw a tower wagon, used at night when the electricity was turned off, for repair and maintenance work on the overhead lines. The Committee resolved to purchase two secondhand bus chassis from the London General Omnibus Company, on which to mount towers and that the old horses used for drawing the existing tower wagon should be destroyed.

Construction between Fratton Bridge to Milton in 1909. At this point the tracks crossed the East Southsea branch railway

However, at the next meeting a report from a veterinary surgeon stated that although 'the old grey mare' was no longer suitable for work on tramway systems, she could work on the land, and a buyer was willing to pay £5 for her. The Committee rescinded their decision to destroy their last horse, and accepted the £5.[32] The organisers of the collection for Alexandra Rose Day asked if they could collect on the cars, but this was refused.

The War Period 1914–1918

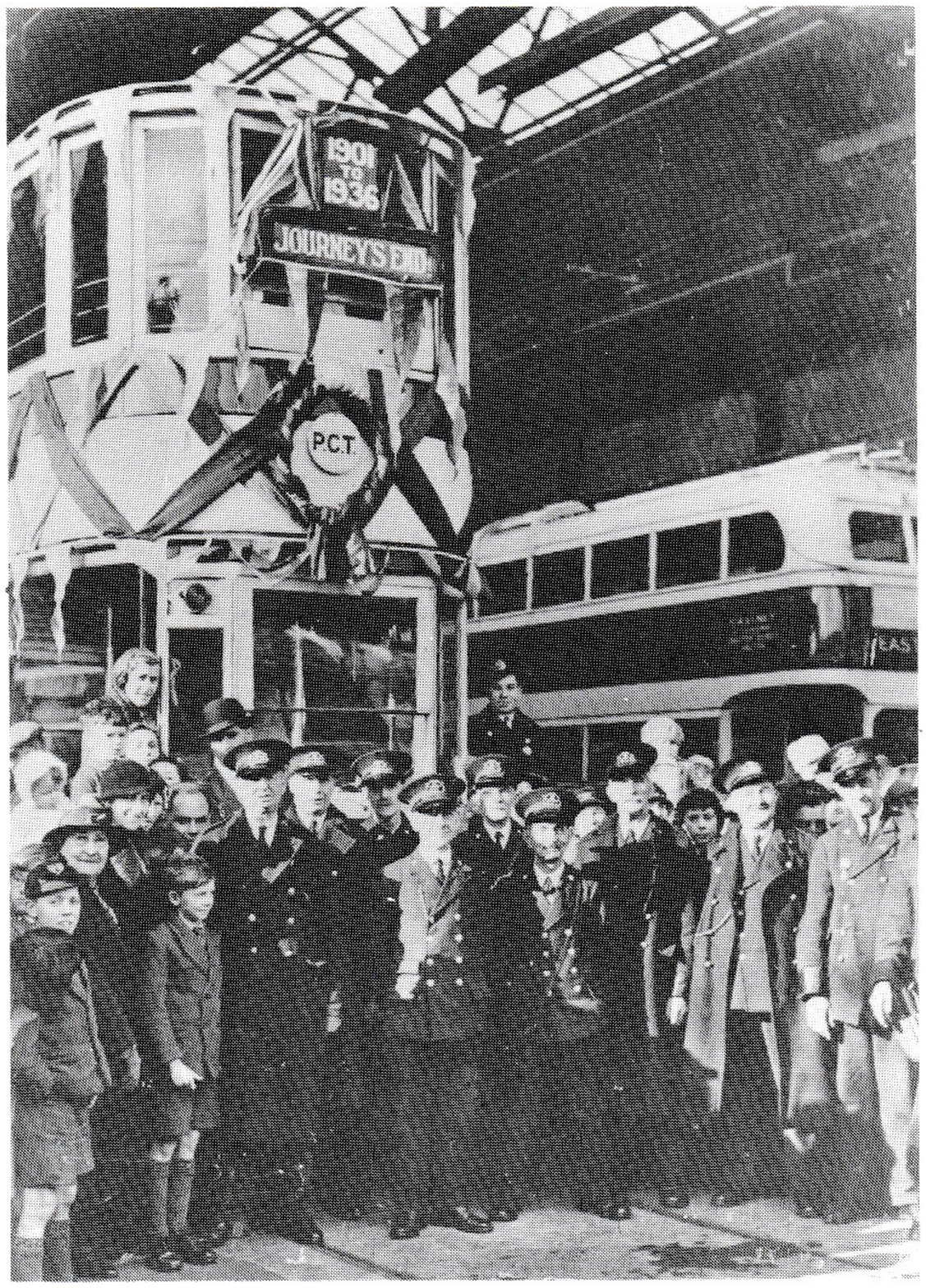
While there had been no major changes since 1903, with regard to the conditions of service of the staff, there had been steady improvements. In August 1914, the outbreak of war foreshadowed many changes. Initially, staff were encouraged to enlist, with an offer to make up their wages, so that their dependants did not suffer. For instance, in November 1914, Mr Tipper, a painter from the workshops at North End, was helped in this way. However, by 1915, the loss of staff had become a problem, and two men who expressed a wish to enlist were told that unless they obtained permission from the Mayor, they could not be promised that their places would be kept for them.[33] To protect staff from the activities of the distributors of white feathers, it was decided to issue special buttons to men remaining in the service of the Committee.[34] By this time, so many men had enlisted that it was decided to suspend the height requirement for motormen and to employ women as conductors. The first woman conductor started work on 4 July 1915, and the first woman inspector on 3 November 1915.[35] The lack of motormen was countered by increasing working hours from $9\frac{1}{2}$ to $10\frac{1}{2}$ per day, and by allowing unpaid volunteers to drive the cars.[36] Early in 1916, a special car was provided to carry convalescent servicemen who arrived by ferry from Gosport to the Theatre Royal, and it was decided to make no charge. Later, cars were made available on a number of routes on Monday afternoons, for patients from naval and military hospitals. Increasing lighting restrictions reduced the average speed of the cars from 7.33 mph to 6.45 mph. The cars ceased running about one and a half hours earlier. Because of the lower speeds, by March 1916 four extra cars were needed to maintain the service, and by November the number had risen to eight. The introduction of Daylight Saving was of some assistance, and from Easter Day 1917, the cars ran for an extra hour. By October 1917, it was recorded that 71% of the motormen and 62% of the conductors had enlisted, and that the service was being maintained by 127 motormen, 8 volunteer motormen, 18 male conductors who were unfit for driving and 182 women conductors.

Replacement by bus, 1919–1936

During the war, the lack of petrol protected the cars against motor bus competition, but did raise problems as the undertaking used motors for ancillary purposes. For this reason, in April 1918, it was decided to purchase a Foden steam wagon. In 1919, the Tramways Committee purchased their first ten motor buses. During this year, there was a degree of return to normality, but as late as May, it was reported that 140 of the staff were still serving and that the women were being discharged as the men returned.[37]

In 1920, there were two developments on the Cosham route. First at Hilsea the twin arches in the fortification were demolished. Second, at Cosham, the deadend terminal adjoining the level crossing was replaced by a turning circle, constructed on a reserved site to the west of the roadway. In 1924, after lengthy negotiations, the Portsdown and Horndean cars began to run through to the Town Hall. There were a number of extensions until in 1927, the service settled down with Horndean cars running every fifteen minutes through to South Parade Pier. The tendency of the Company and the Corporation towards closer collaboration reflected the increase of competition from motor buses. There were a number of operators, including Portsmouth and District, Southsea Tourist, Clanfield and District and Denmead Queen. However, over the years, they were all absorbed by Southdown Motor Services.[38] In the summer of 1925, the Corporation extended their South Parade and Cosham bus service to Drayton, competing with Southdown on the mainland section. Southdown retaliated by introducing a bus service over the most lucrative tram route. They charged the same fare as the trams, but the buses came to the kerbside for their passengers, and were both newer and faster than the cars. However, operations within the borough boundary were licensed by the Corporation Watch Committee, who, realising the impact of bus competition on the Tramways Committee revenue, required Southdown to charge a minimum fare of 6*d.* which effectively restored the traffic to the cars. For their part, the Corporation withdrew their services beyond Cosham.

The Road Traffic Act of 1930 gave Regional Traffic Commissioners licensing powers for bus routes, which included the regulation of fares and timetables. The Commissioners confirmed the arrangement of 1 January 1930 for Southdown buses operating in Portsmouth, by which Southdown conductors would issue special tickets for Portsmouth journeys. All the revenue was handed over to Portsmouth, and in return, the Corporation reimbursed Southdown for every mile operated by Southdown buses within the city boundary. This did not work well, partly because Southdown conductors sometimes forgot to issue the special tickets, and from the end of 1931, Corporation revenue was again protected by higher Southdown fares.



The Tramway Committee's own buses operated on services designed to supplement the tramway network, which nevertheless covered sections of the most lucrative tram routes, such as Commercial Road and London Road. The peak year for patronage of the cars was 1928, after which an increasing proportion of the passenger traffic was carried by buses.

In 1926, both the General Manager, Mr Spaven, and the Chief Engineer, Mr Lironi, were due to retire. In the same year, the Tramways Committee closed their Fratton Power Station, drawing electric power from the Corporation's generating station. This was one of the reasons given for combining the posts of manager and engineer, and Ben Hall was appointed to the new position. Although in 1926, there is no indication that he foresaw that the cars would only be running for another ten years, his appointment was a milestone in the history of Portsmouth transport. Repetition of a long established custom occurred, when in July, it was decided to spend £389 13*s*.2*d*. on decorating cars to mark a visit by the Prince of Wales.[39] The General Strike of 1926 led to the absence of many of the cars from the streets on 4 May. However, by the following day, most of the staff had returned. A number of the strikers were dismissed, although in August, the Committee resolved that when vacancies occurred, priority would be given to the strikers.

By 1929, the number of private motor cars was increasing, with trams and motor cars getting in each others' way. In particular, motorists began parking cars on tram tracks, where they were close to the kerb, and notices were placed on the tram poles prohibiting car parking.[40] The beginning of the 1930s was marked by both development, and the first closures of the tramway system. The maximum route mileage of 17.7 was not reduced until 1931. (The corresponding maximum track mileage was 35.39 miles.) On the development side, in October 1930 a new tramcar appeared, having been designed by Ben Hall and constructed in the North End workshops. In July 1932, the last section of new track was opened, by which cars reached the turning circle at Cosham by a length of reserved track and by running power over a few yards of the Portsdown and Horndean Light Railway. This, in effect, removed the trams from what was then the very busy Portsmouth Road, Cosham to the only length of reserved, sleeper track on the system.

Each year, the position of the tramway system weakened, but almost to the end, although the cars showed increasing evidence of their age, the track was well maintained. In March 1934, the Committee approved the expenditure of £5,840 on replacing the track in Fratton Road, between Lake Road and New Road. The new depot opened at Eastney in 1932, accommodated motor buses but also received an allocation of tram cars.

However, on 19 April 1931, the tram route from Fratton Bridge along Fawcett and Waverley Roads to the Strand was the first to be abandoned. Motor buses took over until they were replaced by trolleybuses. The debate concerning the relative merits of tram car, motor bus and trolleybus had been proceeding for some time. It was not confined to the meetings of the Committee. As early as 1926, Mr H. A. Evans of Helena Road had written to the *Portsmouth Evening News* making a case for the trams.[41] Among the points he made were the ability of the cars to run on English rails with electricity generated with British coal, while motor buses used rubber tyres and petrol. He reminded readers that the tram undertaking had to bear the cost of the width of the road on which it ran, and also was a rate payer. The cars did not produce noxious fumes, and caused less vibration to roadside property. He accepted the lack of flexibility of track bound vehicles, but drew attention to their reliability, particularly in snow and fog. With regard to their position in the middle of the road causing congestion when passengers were boarding or alighting, he advocated the repositioning of tracks at the sides of the road, a move which might not have commended itself to those who wished to leave their vehicles parked at the side of the road.

It will be noted that some of the arguments advanced by Mr Evans, particularly that concerning foreign fuel, applied to the motor rather than the trolleybus. A deputation from the Committee was favourably impressed by a demonstration of trolleybuses in January 1931.[42] In due course, Mr Hall the General Manager was asked to report on the future of the trams. He estimated that if the system

were to be retained and modernised, it would be necessary to spend £204,000 on replacement track and cars in the next ten years. To replace the trams with trolleybuses was estimated to cost £258,281, made up of £200,000 for 100 trolleybuses, £21,240 for adapting the overhead wires and £37,041 for reinstating the roads. Partly because of the manoeuvreability of the trolleybuses as opposed to the track bound cars, the General Manager recommended the trolleybus option, a decision of obvious appeal to the members of the Committee who owned motor cars. However, he advocated a cautious approach, beginning with an experimental route from South Parade Pier to Cosham via the Strand, Waverley and London Roads. Mr Hall's report was accepted.[43] In the event, the trolleybuses proved so popular that in May 1935 it was decided to expedite the replacement programme. The first trolleybuses arrived in August 1934. In order to phase out the cars in 1936, an order was placed for 76 trolleybuses, all of which were delivered between August 1936 and May 1937. In June 1936, the Portsmouth Corporation Tramways became the City of Portsmouth Passenger Transport Department.[44] The last electric cars to run in Portsmouth left the Guildhall for the depot at Eastney on 10 November 1936. Driven by Sir John Timpson, the Chairman of the Committee, Car No 106 headed a procession of three cars, followed by trolleybuses. It was 36 years since the official opening of the electric system, and a number of those watching the last car remembered seeing the first.

Some of the rails were removed, but in other cases, the road surface was reinstated by covering them with asphalt. Lengths remained visible for many years – in 1964 they were still visible in the High Street and in Southsea Terrace. In 1985, rails and granite setts were still visible in Broad Street, and preserved, in association with tram poles, in Rugby Road. Most of the staff were converted with the routes, but not all the motormen were judged suitable for trolleybus driving. In November 1936, the Committee considered two lists, one of men unfit for trolleybus driving, and a second of those who it was decided, would not make first class drivers. Those on the first list ranged from a man aged 41, with 18 years service, to one of 59 who had served the Committee for 36½ years. Some of them were employed in other capacities by the Committee and the remainder were pensioned off.

Description of the Portsmouth Electric Tramway System

Electric Power

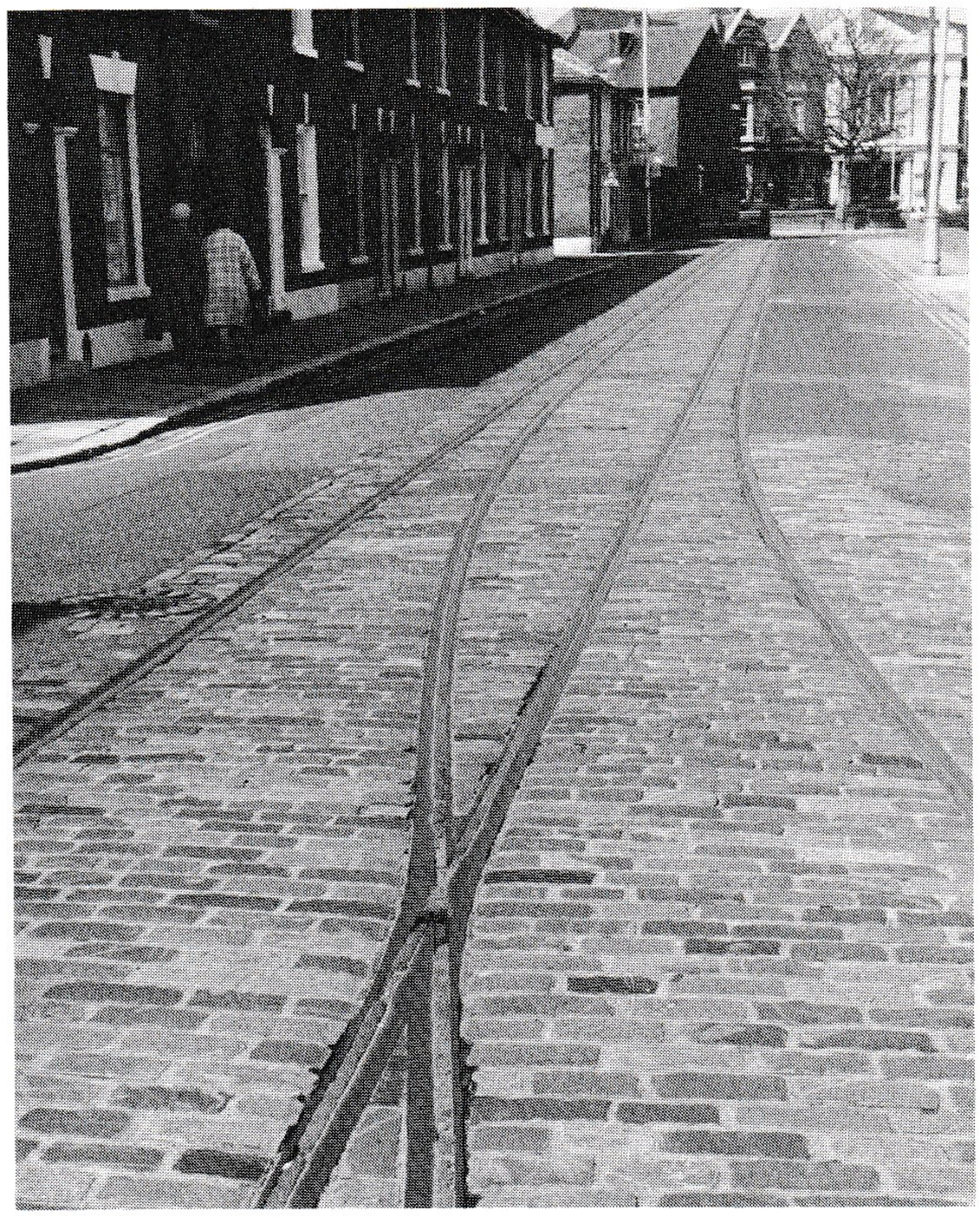
Most municipalities used their electric generating stations to provide power for their tramway systems. The Portsmouth generating station adjoined the Camber Dock at one extremity of the tram routes. The further electricity is carried the more the voltage drops, so if the cars were to receive anything like the voltage for which they were designed, either the power had to be fed in at a central point, or else transmitted at a higher voltage, and reduced for feeding to the live wire at sub-stations. The former solution was selected and a site chosen at a central point in Vivash Road, Fratton, The foundation stone was laid by the Mayor on 29 October 1900.[45] A Chief Engine Driver, F. R. Gibson, with assistants and stokers was appointed in 1901.[46] Dick, Kerr and Co. contracted for the engines and electrical equipment and, by 1923 the power station contained four boilers and five generating sets. The engines were reciprocating steam engines and the station could produce 2,075kW at 500V.[47] The Tramways Committee agreed to supply power for the Portsdown and Horndean Light Railway, but this was too far away to be fed directly without an unacceptable voltage drop. Current at 500V was fed into the overhead wire from a sub-station at Purbrook, an intermediate point between Cosham and Horndean. The sub-station was fed from Fratton with a 5,500V supply. As mentioned above, the Corporation charged the Light Railway not only the cost of generating the electrical power supplied, but also levied a considerable amount to cover capital costs. In 1906, the Light Railway installed diesel generators at the Purbrook sub-station, and took no more electricity from the Corporation until 1916.

The removal of the Portsdown and Horndean Light Railway from the power station load is unlikely to have caused too much concern owing to the increased demand from the Corporation system. During the summer of 1905, the equipment had been overloaded sufficiently to damage a generator, and in December, the Committee agreed to the provision of an additional generating set, to be installed before the summer of 1906. Although the Fratton Road power station was not connected to the town's electricity mains, it did provide power for some vertical transport. In 1903, the Committee agreed to the motors operating lifts in the Town Hall and in the Queen's Hotel being connected to the tramways supply.[48]

The electricity was conveyed by underground cables to feeder pillars which were located at suitable points on the system. They contained fuses which enabled sections of overhead live wire to be isolated. The cables and feeder pillars were supplied by the British Insulated Wire Co. On the wider roads, span wires supporting the live wires were stretched between poles on opposite sides of the road; on the narrow thoroughfares, single poles supported brackets from which the live wires were suspended. The overhead equipment was provided by Messrs. Macartney, McElroy for £18,280. (In 1903 they agreed to a reduction of £150 as Mr Lironi had discovered that some of the line taps had been badly fitted).[49] There were some complaints about

Interlaced tram track and granite setts preserved in Rugby Road

The traverser at North End works with one of the top-covered cars of 1920



the power station, concerning smoke from the chimney and spray from the cooling towers, but these did not persist.

By 1924, the reciprocating engines and other equipment in the Fratton Road station were palpably obsolete, and it was decided to take power from the Camber Dock power station. This was fed to a sub-station on the Fratton site. After a period of service as a standby, the original power station was replaced by a garage of the Portsea Island Mutual Co-operative Society. While the power station only lasted for 25 years, much of the distribution equipment, including the poles, remained in use until the demise of the trolleybuses in 1963. A feeder pillar, dated 1901, was still *in situ* at Cosham in 1972. Among the last relics were the poles, preserved in 1985 in Rugby Road.

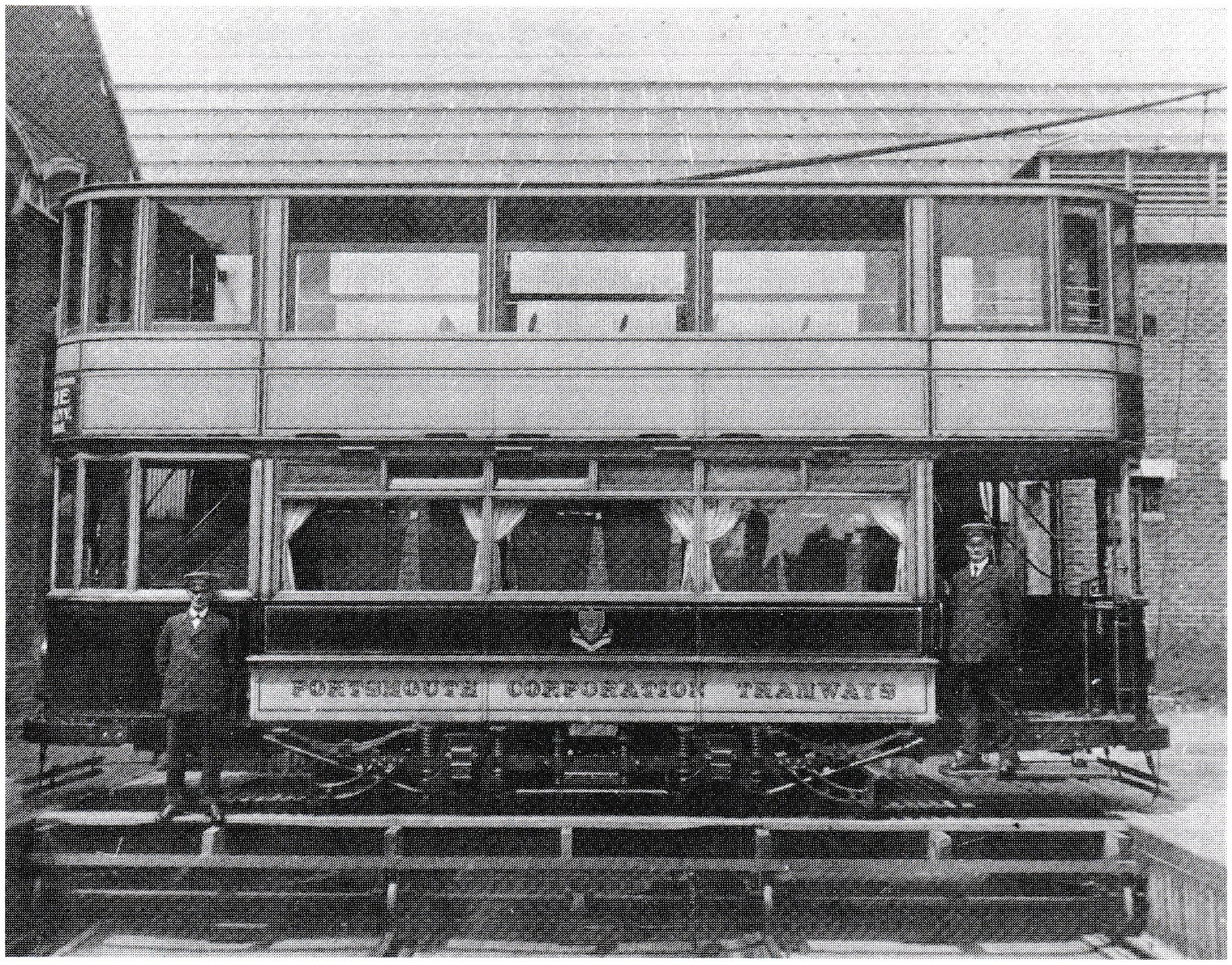
The Track

As mentioned above, at its greatest extent, the Portsmouth electric tramway system consisted of 35.39 miles of track laid to a 4 ft. $7\frac{3}{4}$ ins. gauge. Although some rails required replacement, there were no significant changes in the design of the track during the 36 years that it was in use. The steel rails were laid in forty-foot lengths, weighing either 96 or 100 lbs a yard. At places such as junctions, at which there was considerable wear, manganese steel was used. The rails were laid on a bed of at least six inches of concrete, and held to gauge by transoms. To provide a continuous surface for other road users, the space between the rails and for a short distance outside, was paved with granite setts. However, to reduce the noise, particularly that from iron tyred cart wheels, blocks of jarrah wood were used in chosen locations, such as the vicinity of churches. The tops of the rails formed a recess in the road surface which could be hazardous to cyclists. Drivers of narrow wheeled horse drawn vans had also to ensure that their wheels did not follow the rails, as this was liable to cause the horse to shy. The tramways undertaking was responsible for the part of the road occupied by their tracks, and this was one of the reasons for the replacement of cars by trolleybuses.

A special feature of the Portsmouth tramways was an unusually high proportion of interlaced track. Where a thoroughfare was not wide enough to carry two tracks, the Board of Trade required a single track, with pointwork at each end. However, an alternative was to retain the four rails, with the tracks overlapping so that they took up hardly any more space than a single line. The advantage was the avoidance of pointwork, which was expensive to instal and maintain.[50] At the principal junctions – Town Hall, Rugby Road, Bradford Junction, Fratton Bridge, Charlotte Street, North End and Kings Road Junction – boys were employed to operate the points. They would set them according to the destination shown on the approaching car. Elsewhere, the points would be operated by the motormen. In 1924, the Committee resolved to order 13 automatic points controllers from the Forest City Electricity Supply Company.[51] These were operated by an approaching car, the direction being determined by the drivers' manipulation of his controller. They proved successful, and point boys were no longer employed, except at the junction of Lake Road with Kingston and Fratton Roads. Because of problems of visibility, they remained here, operating points and warning lights, until 1934.

In addition to carrying the cars, the rails had an electrical function, as the current collected from the overhead wire was returned through the wheels of the car and the rails, to the power station. Especially when the road surface outside the tram tracks was not made up, dirt would accumulate on the rails, reducing the effectiveness of the electrical contact between wheels and rails. To reduce abrasion, and also to maintain electrical continuity, especially in hot dry weather, the Committee accepted the engineer's report in favour of watering the rails.[52] At the principal junctions, this was done with the aid of watering cans by the point boys, but for general use, in 1904, the Committee acquired a special car fitted with a water tank, which sprayed the rails.

Most of the tracks were laid in thoroughfares under the control of the Corporation, but there were some crossings over water or railways. The main line railway was crossed at three points, in two cases the trams going underneath and at one, over the top. In order to accommodate the overhead equipment, it proved necessary to lower the road surface under the bridge carrying the railway just north of the Guildhall. This did not involve the railway, but although Fratton Bridge carried tramcars and other



road traffic, its widening was undertaken by the railway company. The Committee at first asked for the bridge construction to be delayed until after the 1902 Coronation, but by 1903 they were asking for the work to be expedited. Fratton Bridge was widened, but the proposal to construct a new bridge at Copnor, to replace the level crossing, finally materialised without the provision of tram track. More complicated were the arrangements for bridges over water, initially over the moat and over the creek at Hilsea. The bridge over the moat was removed by partially filling in the water channel, but the old Portsbridge was merely strengthened. At the time, it was outside the borough boundary, and after the War Department had declared their intention to withdraw from responsibility, negotiations lay with the Hampshire County Council. Until the necessary strengthening was completed in 1903, only horse cars were allowed to cross the bridge. With the increase in traffic which followed the mechanisation of road transport, complete rebuilding became necessary, and the present Portsbridge was opened in 1927. In addition to the one bridge over the main line railway, tram routes crossed two bridges over the branch line to Southsea. This was closed at the beginning of the First World War, and it was finally decided not to re-open it. The bridge carrying the tracks of the Goldsmith Avenue route was demolished in 1924 and early 1925, and that at Albert Road in 1925 and 1926.

Apart from major track laying operations for new routes, during the 36 years there were a number of minor changes. The Committee were frequently faced with requests for the reduction of traffic noise, by the substitution of wood blocks for granite setts – for instance, in 1907 for Greetham Street and Victoria Road North.[53] One of the reasons for the comparative slowness of the cars, second only to the high proportion of interlaced track, was the number of sharp curves. However, a number of these were improved. For instance, following the purchase and demolition of two houses at the corner of Somers Road and Bradford Road, in 1905 the sharpness of the curve was reduced. At the Circle, in Clarendon Road, after the purchase of Lennox and Chester Cottages, which occupied the centre of the Circle, the tracks were carried across it instead of around it. Terminal facilities were improved by the provision of turning circles at Cosham in 1920 and at Clarence Pier in 1925.

The Electric Cars, Stops and Shelters

Speed, frequency and fares were probably the main influences on the passengers, but they were also concerned with the quality of the ride. Although the condition of the track contributed to the comfort of the passengers, of greater importance were the cars themselves. Portsmouth had a maximum of 114 cars. A hundred of these had open tops, 13 had covered top decks, and one was of the toast-rack type, purchased secondhand from Southampton. The first order for 80 cars went to Dick, Kerr and Co. of Preston, who mounted the bodies and electrical equipment on Brill 21E trucks. These had four wheels and were powered by two 25h.p. motors, drawing Direct Current at 500V from the overhead wire. The saloons had longitudinal seats, running along the sides of the cars, each carrying eleven passengers. Carpeted seats and a bare floor may have been somewhat austere, but a touch of luxury was given by the provision of maroon curtains. Transverse wooden seats were provided for 33 passengers on the upper deck, with reversible backs so that all passengers could face in the direction of travel. (This was necessary as the cars were driven from either end.)

The idea of ex-horse cars being used as trailers failing to receive the approval of the Board of Trade, four of the best car bodies were mounted on Brill 21E trucks for use

as electric cars. They seated 46 rather than the 55 passengers who could be seated in the new cars. To prevent people being run over, the Committee ordered Tidswell Life Guards which pushed aside anybody or anything on the track.[54]

Apart from the discomfort of passengers in wet or cold weather, rain presented a particular problem with open topped cars, as most passengers disliked sitting on wet seats. Conductors were instructed to dry seats on the top deck after a shower of rain, and the Committee resolved to equip them with chamois leathers for this purpose. While this helped when the conductor had time to do it, it was felt that the demand for covered tops should be assessed, so a roof was ordered and fitted to Car No. 80. It was tried on the Eastney and Copnor routes and also on the main line, the revenue earned being compared with that of the open topped cars. It earned so little more – in fact, on the Eastney route, in summer, it earned less – that the experiment was abandoned in 1907. The practice of watering the track has already been mentioned, and a special water tank wagon was acquired from Dick, Kerr in 1904.

In 1906, the Committee ordered a further 16 cars from Dick, Kerr, to cover augmented services and withdrawal for maintenance of the first batch of cars. These only differed in detail from the original 80 cars – they had spring roller blinds instead of curtains at the windows and the carpeting on the seats in the saloon was of a different colour.[55] Incidentally, infestation was a greater problem at that time, and in 1911, the carpeting was removed from the seats of all except four of the cars for hygienic reasons. Services were maintained with a hundred cars until after the First World War.

In warm weather, those passengers not ascending to the upper deck, were cooled by leaving the doors at each end of the saloon open. To prevent passengers attempting to use the platform in use for the driver, in 1902 the Committee ruled that a chain should be drawn across the doorway. They also decided that on wet days, public holidays and any other busy times, 10 standing passengers could be allowed in the saloon.[56] The problem of wet seats on the top decks was alleviated in 1914, when the Committee resolved to purchase tarpaulin covers which could be fixed to cover the seats.[57]

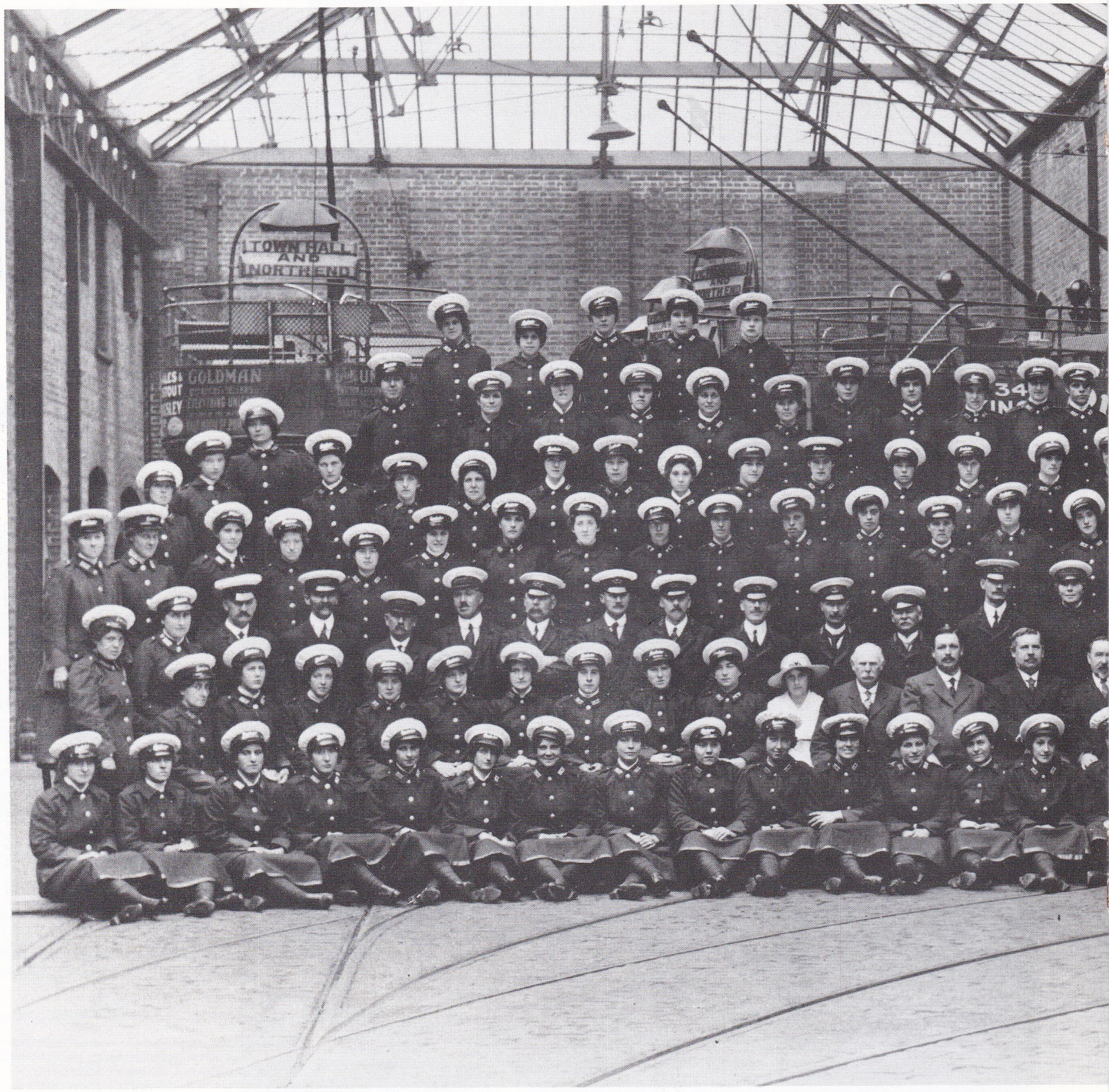
In 1919, the open sided toast-rack car was purchased from Southampton, mainly intended for pleasure riding on warm summer days. In 1915 and 1916, two new watering cars were placed in service. Almost the final addition to Portsmouth's fleet were 12 new cars purchased in 1920, from English Electric, successors to Dick, Kerr and Co. They had covered tops and originally seated 58 passengers. After the arrival of Ben Hall as General Manager, a number of cars received a major facelift. Perhaps most apparent to the passengers was the replacement of the wooden longitudinal seats in the saloons, by upholstered transverse seats, those on one side of the gangway holding two people and on the other, one. Refurbishing continued until 1934, by which time many of the cars were in a poor state. However, a hint of what might have been if the vote had gone for new trams rather than trolleybuses was given by Car No. 1. This was designed by Mr Hall and built in the North End workshops. Needless to say, it had a covered top and upholstered seats. It was sold for use in Sunderland in 1936, and remained in service until 1953.

While passengers would be more concerned with such matters as whether to go on the open top if rain threatened, other citizens would be aware of the appearance of the trams in the streets. They were well painted, for most of the time with a livery of crimson lake and cream (officially described as scarlet lake and Oxford ochre). The words 'Portsmouth Corporation Tramways' appeared in gold on rocker panels. As required by law, the name of the official responsible appeared in the corner of

Car no 116, one of the top-covered cars of 1920, ready to depart from Clarence Pier for Cosham

Car no 1, which might have been the first of a second generation of cars, photographed when new in 1930 on Portsbridge

Car decorated for the Silver Jubilee of 1935


TOWN HALL
AND
NORTH END
GOLDMAN

In August 1916, new uniforms were issued and the platform staff of 335, together with the indoor staff, were assembled on a Sunday morning for an official photograph

All routes shown on this map were inaugurated electrically in 1901, except Fratton Bridge to Milton 1909, Stamshaw to Alexandra Park 1913, Festing Hotel to S.P.P. 1913, and Milton to Eastney 1913. TRACK LAYOUT shown is as for 1930, but this map also shows any previous variations (there were very few) on the four 1909-13 routes. (For all other routes see separate map.)

ROUTE NUMBERS on this map are the new ones as introduced in 1927. Subsequent alterations were:- 19-20 withdrawn in 1928; 3-4 & 13-14 diverted via Victoria Road in 1931 instead of Fawcett Rd & Waverley Rd; 17-18 diverted in 1931 from Point to Dockyard; 13-14 withdrawn in 1932; all other routes replaced by trolleybuses in 1934-36.
IMPORTANT:- All route numbers were uni-directional and ran only in the direction shown by arrows at termini. Trams then returned with the other number of each pair.

METHUEN ROAD. Eastney new depot, works, & garage — all opened 21 Jan 32.

BUS GARAGE; PAINT SHOP; BODY SHOP; STORES; FITTING AND MACHINE SHOP; OVHLS; BUS ENGINES; WASH BAY; TOWER WAGONS; SCRAP DUMP. YARD; YARD; TYRE STORE; BOILER; CANTEEN; BLACK SMITH; CHIEF OFFICES; WIDE NEW ROAD BUILT 1916-36; HENDERSON ROAD; HIGHLAND ROAD; TERMINUS 1901-13; The Highland Chief DEMOLISHED 1916; CROMWELL ROAD; 0 100 FT.

Alterations at Copnor: ORIGINAL; SECOND; FINAL

ALTERED LAYOUTS AT CLARENCE PIER

HORSE TO 1901	1901 ONWARD	UNTIL 1925	1925 ONWARD

WINTER TERMINUS; SUMMER ONLY; FOOTPATH; KERB; LAMP POST (1924-1926); 1-2; 7-8; 19-20

PORTSMOUTH CORPORATION TRAMWAYS
Electric Routes as at 1930.

0 1/4 1/2 3/4 1 MILE

TRAM TRACK:- SINGLE, INTERLACED, AND DOUBLE
TRAILING CROSSOVER ON INTERLACED TRACK
AUTHORISED TRAMWAY EXTENSIONS NOT BUILT
TROLLEYBUS EXTENSIONS NOT PREVIOUSLY SERVED BY TRAM
CORPORATION MOTOR BUS ROUTES IN 1955
OTHER ROADS
RAILWAYS

the body. From 1901 to 1902 this was shown as 'E. Rotter, General Manager and Engineer', followed until 1926 by 'W. R. Spaven, General Manager' and finally 'Ben Hall, Engineer and Manager'. In the 1930s, there were variations in the livery, some cars appearing in red and white. Although the standard of painting achieved by North End Depot was so high, the overall appearance of the cars was not improved by the use of advertisement boards along the sides and at the ends of the upper decks. The Landport Drapery Bazaar, Handleys, and Buchanan's Black and White Whisky were all brought to the notice of the people of Portsmouth. The letting of the advertisement boards on the trams was usually left to agents, for many years, Messrs. Courtenay.[58]

On special occasions, the cars were decorated. Their great asset, in the days of gas lighting, was the ability to provide brilliant displays of electric light bulbs. For instance, a photograph has survived of 'The Illuminated Car, Aug. 1905', this showing No. 80 in North End Depot. Coloured bulbs on the advertisement panels spelt 'Vive La France'[59] on one side and 'Entente Cordiale' on the other. The practice continued between the wars, the amount spent reflecting the importance of the occasion.

The decoration of a car in 1920 for a fete in the Victoria Park was modest compared to the displays in 1935 for the Silver Jubilee and the Jubilee Naval Review.[60] In 1933, for Navy Week, the toast rack car was disguised as a boat.

More utilitarian, if less striking, was the indication of the routes of the cars. Initially, only the destination was shown, but from June 1914, large letters indicated the route followed. In 1927, the letters were replaced by numbers, which also indicated the direction of travel. At the opening in 1901, compulsory and request stops were indicated by bands of coloured paint on the traction poles. From 1904, the stopping places were marked by signs affixed to the poles. In the same year, the Tramways Committee considered the provision of shelters at the principal stops. They resolved to construct the first at the Town Hall, but their decision was rejected by the Council, apparently because a shelter was considered unsightly.[61] They tried again in 1911, with proposals for shelters at the Town Hall and Cosham, and this time they were accepted. The construction of more shelters was authorised in 1915 and again in 1925. By 1930, they were to be found at many points on the system, including the Guildhall, Greetham Street, Kings Road, Dockyard, Milton, Eastney and Cosham. They were ornate structures, latterly protected with aluminium paint. Many were demolished, but in 1985 they were still to be found at Cosham and in Southsea Terrace.

When the decision to replace the cars was taken, apart from the 12 cars purchased in 1920, and Car No. 1 of 1930, all the fleet was over 30 years old. With this in mind, the Committee accepted an offer of £90 from Sunderland for No. 1, instructed the General Manager to try to sell the twelve cars purchased in 1920 for use on other undertakings, and to dispose of the remainder as scrap. Unfortunately, few tramways were seeking secondhand cars in the 1930s, and the cars of 1920 also went for scrap. However, it was some years before all had gone – in 1938, the Committee was offering the seats from the upper decks for use in the grounds of hospitals. One car, No. 84, was preserved, and in 1985 was in store in Eastney Depot.

Depots and Workshops

Like the power station, the depots and workshops were the parts of the system which the public did not see. The Committee decided to keep all their electric cars in a new depot at North End, and to lease or otherwise dispose of the old horse depots. Beginning with the mention of a lease to the Anglo–Bavarian Ale Co., records show numerous references to the letting of the old Broad Street Depot and Stables. The first letting of the Ordnance Row Depot was to the War Department; it was finally sold in 1909. Other depots, including Rudmore and Fratton Road were all disposed of. The new depot at North End, with 16 running roads, could accommodate the entire fleet of electric cars. Perhaps predictably, it was lit by electricity, with both arc and incandescent lamps. The workshops and offices were not finally completed until 1904. The offices were concerned with day to day running, the paying in of cash and staff duties – administration was conducted from the Town Hall. In 1927, a new site was purchased at Eastney.[62] This was intended mainly as a bus depot, but it was decided that by keeping some trams at Eastney and some buses at North End, 'dead' mileage could be reduced. The administrative offices at the Guildhall were moved to a new block, adjoining the Eastney Depot, in 1932. North End remained in use for trolleybuses and motor buses until it was demolished in 1983; Eastney depot remains in use in 1985.

The Tramways in Service 1901–1936

Services

The various parts of the tramway system having been described, it remains to observe how it worked. Firstly, what sort of service did it provide for the people of Portsmouth, particularly during the period before the end of the First World War, when the electric cars were almost the only form of public transport within the city? As mentioned above, nearly everybody in Portsmouth was within half a mile of a stop, and having reached it, for most of the time between 5 a.m. and 11 p.m. they would not have to wait

for more than ten minutes for an electric car. Once on it, they could anticipate transport to any other part of Portsmouth with one change of car. The timetable allowed for connections, and timekeeping was normally meticulous. Very occasionally things went wrong through breakdown or accident or something less usual, such as the stoppage of cars in Goldsmith Avenue for 40 minutes by the police, to assist in the dispersal of football supporters in 1911.[63] Apart from the night hours, Sunday mornings and Christmas Days, the cars were always available.

The extreme reliability of the service depended partly on the tram crews knowing the time. They were not provided with watches, but clocks were provided at all the terminals and at key points in the systems, from the beginning of 1903.[64] From July 1902, timetables were displayed in the cars. Some indication of the standard of timekeeping that was expected is given by the practice of checking in the cars at the end of the working day. The time of their return to North End Depot was recorded, with a tolerance of only two minutes.[65] Doubtless, a combination of strong discipline and close supervision assisted in the maintenance of high standards. The chief inspector, Mr Prescott, the traffic superintendent, Mr Mumford and the General Manager, Mr Spaven were frequently to be seen riding on the trams.

However, it must be recorded that the cars were noteworthy for reliability and frequency, rather than speed or comfort. As was indicated by the description of the cars, hard seats combined with a lack of heating and exposure to weather of all kinds on the top deck, did leave room for improvement. With regard to speed, the reduction from an average of 7.33 mph to 6.45 mph, during the First World War has already been mentioned. By modern standards, this is not fast, although it compared quite favourably with the alternative of horse traction. There were speed limits on curves – usually 4 mph – and in 1916 an overall speed limit of 10 mph was placed on the routes between North End, Twyford Avenue, and Cosham. Perhaps because tramcars ran on tracks, in some respects the government treated them as railways rather than road transport. In 1919, the new Ministry of Transport acquired the Board of Trade powers for the regulation of tramways. When Mr Hall took over in 1926, one of his first aims was to endeavour to increase the speed and comfort of the cars. Speeding up was achieved by the substitution of double track for interlaced track (sometimes associated with road widening), the revision of stopping places, and the relaxation of some speed limits. Ministry of Transport approval was necessary and this was duly obtained.[66] The position of the stops could be of considerable importance for trade, and occasionally requests went through to the Committee. For instance, in 1915, the Southsea Electric Theatre asked for a stopping place outside their cinema in Fawcett Road.

Over the years, although the use of tracks instilled a degree of inflexibility, there were adjustments to the routes followed by the cars. The Outer Circle service was inaugurated in 1902, to be followed by the Inner Circle in 1903. In the following year the Inner Circle was renamed the 'Figure 8 Route'. Most services ran between terminals with such points as Floating Bridge (Point), The Hard or South Parade Pier at one end, and Eastney, Copnor or Cosham at the other. The opening of new sections in 1913 made it possible to introduce three new circular services. The Portsdown and Horndean cars ran over Portsmouth tracks, running through to South Parade Pier from 1927 to 1935. There was no fundamental deterioration in the service provided by the electric cars; they succumbed to alternative vehicles, namely motor and trolleybuses.

Fares and Tickets

The Corporation did not use the trams to further social policies, and they were expected to produce enough revenue to pay the capital and operating costs, with a modest surplus preferred to deficit. The scale of fares varied slightly over the years, but except for a period at the end of the First World War, the minimum fare was always 1*d*. The maximum fare, which covered the journey from South Parade Pier to Cosham, was 4*d*. rising to 4½*d*. at the end of the war, but falling to 3*d*. in the face of the bus competition of the 1920s. From 1902 it was possible to purchase books of tickets from inspectors or at the transport offices. There were a number of requests for fare reductions, including one for a universal penny fare.[67] The only long standing concessions were for journeys to work and for children at school. Workmen's fares – 1*d*. single and 2*d*. return irrespective of distance – were issued on all cars leaving terminals before 8.45 a.m. A request for a ½*d*. fares from Buckland Ward was refused in 1904.[68] On the other hand, a special fare of 6*d*. was charged for a ride on Car No. 80 when it was decorated for the visit of the French fleet.

Apart from the owners of books of tickets, passengers purchased their tickets from the conductors, who circulated amongst the seated passengers. To check any inclination to travel further than the amount paid permitted, from 1903 the tickets were marked with the names of identifiable points on the route – e.g. Strand, North End and Town Hall. With the aid of a ticket punch, conductors marked the point at which a passenger had boarded, by making a small hole in the ticket. This not only provided a check on passengers, but also on conductors, as the small piece punched out from the ticket was retained in the ticket punch, and the colour indicated the value of the ticket

that had been issued. The 'confetti' extracted from a conductor's punch when he paid in his cash could be counted, with some eyestrain, as an indication of his ticket sales. The tickets were also marked with consecutive numbers and at the end of each journey, conductors made up their waybills, indicating how many fares had been collected on a particular journey.

Fraud by conductors was not unknown, and passengers were expected to prevent this by ensuring that they received a ticket, and also that it was punched in their presence. The punches were fitted with bells that rang to prove that this had been done. Conductors carried their tickets in a rack, and were provided with a leather bag, hung round their neck, for collecting money. Pre-paid tickets, such as those in books of ten 1*d*. tickets purchased for 9*d*., or return tickets, were exchanged by the conductor for special tickets, of a different colour to distinguish them from those purchased. There were changes in the colour of tickets and in 1927 the stages were given numbers instead of names, but there was no significant change in the method of fare collection during the tram period. There were some experiments with ticket issuing machines from 1934, but in Portsmouth, it was 1937 before the ticket punch was replaced.

Accidents

Although on balance, the cars were a boon, occasionally people were maimed or killed by them. They were also involved in collisions with other vehicles. While in some cases, tram drivers did bear the blame, many of the accidents were not their fault. Reckless behaviour was always condemned. For instance, in 1906 a notice was displayed stating that boys had been prosecuted for jumping on and off the steps of moving cars.[69] Most accidents were not serious. The figure of 2,338 reported to the Committee between 1 December 1926 and 30 November 1927 gives an average of a little over six per day, many of which involved minor collisions with other vehicles. All of these involved staff time, and not infrequently were followed by claims and counter-claims. Typical was the claim by Curtis and Sons for 'injury to one of their vans and damage to furniture therein', caused by collision with a tramcar.[70] An accident of another kind occurred in 1903 when men laying gas pipes 'pricked' an underground cable, bringing the cars to a temporary halt. Particularly in the early days, there were frequent claims for damage after horses had bolted, a typical incident occurring in Lake Road in 1903.

There was a serious accident at North End on the Easter Monday of 1904 when a car and a horse brake collided, killing one person and injuring others. Accidents seem to have occurred in spates. For instance, at their meeting on 4 March 1915, the Committee were informed of three fatal accidents in the previous 12 days. On 20 February a woman was knocked down near Clarence Barracks, on 26 February a soldier was killed between Hilsea Avenue and the Military Hospital Gates, and on 2 March, a man and a boy died at the corner of Lake Road. This may have been associated with wartime lighting restrictions, although the more severe restrictions came later. The lifeguards fitted to the cars certainly saved some lives, but not all. In one accident, near the Fire Station which killed a 'little child', it was noted that the lifeguard was in order, and that the coroner had given a verdict of accidental death.

The 15 accidents occurring between 14 March and 13 April 1916 were analysed as follows – collisions – one with a horse, four with horse drawn vans, two with trolleys, three with motor cars, two with taxi cabs, plus three cases of passengers jumping off cars in motion. Most of the accidents were caused by vehicles or people getting in the way of the trams, and most of the claims for compension were resisted, but occasionally the Committee had to take the blame. For instance, on 5 April 1918, a car collided with a van belonging to Messrs. White and Co., killing the driver, and in this case the verdict was of accidental death caused by an error of judgement of the tram driver.[71] While it would be misleading to claim an immaculate safety record for the cars, despite the kind of accident that has been described, they did carry large numbers of the people of Portsmouth over many miles without mishap.

Finance

As already indicated, the main expenses of the tramway undertaking were the interest payments on its capital assets, including track and cars, the cost of electricity and the wages and salaries of the staff. Maintenance of cars, track and road surface was a considerable item, while other expenses included insurance, licence fees and rates on property. Receipts were mainly from fares, although there was some revenue from advertising and miscellaneous sources of income, such as the sale of electricity to the Portsdown and Horndean company. In the financial year, 1904–5, advertising revenue amounted to £1,093 15*s*. 0*d*. and the surplus as £21,246 7*s*. 7*d*.[72] This was doubtless taken into account by the Committee when they agreed to the expense of decorating cars for the visit of the French fleet, in August 1905. Despite this unusual expense, there was another surplus in 1905–6 and £3,500 was transferred to the Corporation for relief of the rates.[73] The accounts for 1914–5 show, on the expenditure side, that £308,072 went towards the repayment of capital, and £61,179 was allocated for the renewals fund. Of the surplus of £24,074, £10,000 was transferred for the relief of rates. Following this, in May 1915, fares were reduced. Despite the difficulties with staff, the First World War was a period of

prosperity for the undertaking, with a record transfer of £14,000 for the relief of rates in 1916–7. However, increasing costs, including labour and fuel, led to deficits in 1919–20 and 1920–1. Subsequently, the undertaking returned to surpluses, apart from 1926–7, when revenue suffered from the effects of the General Strike. Surpluses continued until the depression of the early 1930s, by which time the cars were being phased out. A deficit was recorded for the trams, for the last years of operation, when the system was in process of dismemberment.

It could be argued that in view of the proportion of surpluses transferred for the relief of rates, with the exception of workpeople travelling at reduced fares, there was a transfer of money from tram passengers to ratepayers. Portsmouth car fares however, were not higher than comparable fares on company owned undertakings, and in some respects, the money devoted to the relief of rates, could be compared to dividends paid by a company to its shareholders. As has been noted above, it reflected the fact that the tramways were run as an efficient transport undertaking, rather than as an instrument for social planning. The only move to make available better housing facilities was the provision of workmen's fares, and there was none of the co-ordination between new tramway routes and council housing, demonstrated by the London County Council Tramways and other major municipal undertakings.

The Staff

The number of people responsible for providing the electric car services in Portsmouth varied, but reached a peak of about 420. The operation of the cars depended directly on motormen, conductors, point boys and inspectors, who made up over 75% of the staff. Until 1926, a small group ran the power station, while others were responsible for the maintenance of electrical equipment, track and above all, the cars. In charge was a small bureaucracy, including clerical staff, the engineer, the traffic superintendent and the general manager.

At the end of 1900, the staff of the horse tramway company were given notice of dismissal but were re-employed by the Corporation. The electric cars were not ready and so there were no immediate changes in the duties of the men. With the introduction of the electric cars, new wage scales for the weekly paid staff were agreed by the Committee as follows – Chief Inspector £2 10*s*. 0*d*., other inspectors, between £2 0*s*. 0*d*. and £1 1*s*. 0*d*. Hours of work were reduced from between 63 and 67 per week to 60 per week excluding any meal breaks. For this 60 hour week, motormen in their first year received £1 5*s*. 0*d*., in their second year £1 7*s*. 0*d*. and in their third year and later years £1 10*s*. 0*d*. Conductors between the ages of 18 and 21 were paid £1 0*s*. 0*d*. per week, and those over 21, £1 2*s*. 0*d*. during their first year, £1 3*s*. 6*d*. for their second, and £1 5*s*. 0*d*. subsequently. Of the track workers, the foreman platelayer was paid £2 0*s*. 0*d*. per week, and the paviours and labourers were paid 'as required'. Motormen and conductors received each year one tunic, two caps, and two pairs of trousers, with a great-coat every two years.[74] Tenders for supplying 230 sets of clothing were sought in February 1902. It was realised that the inspectors and point boys had been overlooked, so full uniforms were ordered for the inspectors, but only tunics and caps for the point boys.[75] The men were expected to present a smart appearance – there is a record of a driver sent home, with loss of pay, for appearing for duty with brown boots.[76] When women were employed during the war, they were issued with caps, tunics, skirts and gaiters.

Although pay was modest and the hours long, because of the security, employment on the cars was in demand.

Car no 7, one of the original cars of 1901 about to leave the Hard for Eastney

Applicants had to pass an eyesight test, provide evidence of good character and indicate any other qualifications. When the electric cars were introduced, all the staff were tested, and unfortunately four motormen and five conductors failed the eyesight test. Licences were obtained for 102 drivers and 90 conductors in May 1902.[77] Many details affecting staff were settled at this time. For instance, storage facilities were provided for conductors to keep their ticket punches and money bags at the depot, and, on starting a turn of duty, they received a float of 2*s*. 6*d*. The amount to be paid in could be checked from the conductor's waybill, giving the number of tickets issued, with a further check from the 'confetti' removed from his ticket punch. In 1926, it was decided that if the conductor had collected more than the value of the tickets issued, the excess was to go to the Corporation, but if there was a deficit, this must be made up by the conductor. As this rule followed the General Strike, it may have reflected a change of policy, to the disadvantage of the conductors.

Partly to avoid payment of claims, the Committee usually defended its employees. Even where no claim was involved, they frequently did provide support. For example, in 1902 they paid the expenses of two motormen, summoned for fast driving (this could be related to a previous decision not to provide 'speed indicators' on the cars, as they might distract the drivers). They received both praise and blame for the conduct of the staff. For instance, in July 1902, Dr Smith complained of the 'screeching, bell-ringing and shouting' of the conductors. This could be set against a complaint of the conductors failing to shout the names of the stops. As for praise, Major-General Mawby commended Conductor Saunders for his smartness in capturing a pickpocket. Saunders was called before the Committee and complimented.[78] In January 1903, it was decided to pay a bonus of ten shillings every six months to drivers who had not been involved in accidents – 88 qualified when the first bonus was paid in 1904.

At busy times, the 60 hour week was sometimes exceeded and, although the men were not entitled to overtime, in 1905 they were allowed three days pay for the extra time worked during the visit of the French fleet. Part of the new North End Depot was made available as a Recreation and Dining Room, and this was run by the Employees Recreation Committee. It was this Committee which in December 1905, dealt with an invitation from the Vicar of St Marks who said that residents of his parish would like to give the tramway employees a breakfast on a Sunday in the New Year.[79] The Tramways Committee did not negotiate with trade unions, but would always receive memorials from its staff. In 1907, the men submitted a memorial requesting eight hour shifts on six days with alternate Sundays off.

The cars operated from about 1 p.m. on Sundays with a single shift, so the men's proposals would have meant working 48 hours one week and 58 the next – on average, a 53 hour week instead of the usual 60 hour week. It was some years before a reduction of working hours of this order was achieved, but improvements were made cautiously. In 1909, the bonus of ten shillings for every six months free of accidents paid to drivers, was extended to conductors 'for good conduct'. The one hour dinner break, previously unpaid, was to be included as part of working hours.[80] In 1910, it was resolved that beginning in 1911, the men should have paid leave for six days per annum. By 1912, when the average hours had been reduced to 56½ per week, all the men were granted a wage increase of one shilling. Conductors could expect to become drivers, but in 1912, a new category, known as Permanent Conductors, was recognised, with a weekly payment of £1 8*s*. 0*d*.

The Committee meeting on 7 October 1913 was mainly concerned with staff matters. First, the railway company was to be approached for permission for tramwaymen to use the station conveniences at Cosham, and consideration was to be given to the provision of conveniences at the tram terminals. Second, the older drivers were to be allocated to routes with lighter traffic. Third, wages were increased to between £1 6*s*. 0*d*. and £1 9*s*. *0d*. for conductors, and £1 9*s*. 0*d*. to £1 11*s*. 0*d*. for drivers. During the period before 1914, with increased services and new routes, there had been a steady increase in staff. In 1902, licences were obtained for 102 drivers and 90 conductors. By 1908, this had increased to 117 drivers and 112 conductors. In August 1916, with many women conductors, the staff had increased to 335. On a Sunday morning when the cars were not running, they were all assembled at North End Depot to have their photographs taken in new uniforms.[81] Wartime conditions, including lighting restrictions, made the work of the staff more difficult, while inflation produced money problems. In 1917, a wage increase was granted, and Motorman Greenwood wrote a letter of thanks to the Committee, on behalf of the staff. The Committee continued to deal with a wide variety of matters concerning staff, such as a requirement for point boys (who were aged 14 to 18) to attend continuation classes and a decision not to provide conductors with seats for fear that they would be less zealous in collecting fares.

After the staff had worked daily (except for Christmas Day) for so many years, it was a great shock to the Committee when on 4 May 1926, there were many cars off the streets. The staff had responded to the call for a general strike. The threat of dismissal was enough to ensure a major return to work on the following day, but 102 men were discharged. Over a year later, in October 1927, 28 of

these had not been reinstated.[82] On a lighter note was the formation of the Tramways Band. Its members played in the parks on Wednesday, Saturday or Sunday afternoons, as requested. The band received financial assistance – in 1931, this was £50 per annum. With the demise of the cars, all the conductors were transferred to new trolleybuses. Unfortunately, some of the drivers were unable to cope with the new vehicles. Some of them were found other jobs within the undertaking and the older men were pensioned off.

The essential support for the staff who operated the cars was provided by the men who maintained the track, the cars and the electrical equipment and those who, until its closure in 1926, worked in the Fratton Power Station. The first appointments to the power station were made in 1901, and consisted of F. R. Gibson, described as Chief Engine Driver, or Superintendent, with two assistant drivers and two stokers. They worked in two shifts, covering the period during which the cars were in operation. There were no great changes during the 26 years of the station's operational period, and on its replacement by a substation, the staff were transferred to the Corporation Electricity Undertaking. The maintenance men who worked the track have already been mentioned. There was some seasonal variation in work on the roads, while for new works, such as the extending of routes, outside contractors were employed. Much of the track maintenance was done by day, but the electrical equipment, including the overhead wires, was serviced during the night, with the aid of the tower wagon. Men such as horsekeepers, employed on the horse tramways, were only retained as long as the horses. For example, on 7 July 1903, Mr Coleman, who had been a saddler for 16 years, was discharged 'in consequence of there being no further use for him'. Staff in the workshop not only carried out running repairs, but also were responsible for major overhauls of the cars, including repainting. In 1930, they built a new car Ben Hall's No. 1. The truck and electrical equipment were purchased from outside, but the bodywork was a product of the North End Depot. The workshops at North End enjoyed a considerable reputation for the quality of their work.

The bureaucracy, which rarely exceeded ten people, was small in relation to the number of staff, but crucial for the success of the undertaking. A key figure was E. Rotter, previously with Dick, Kerr and Co., appointed as manager and engineer in June 1899, with a salary of £400, rising to £500 per annum. Mr Rotter was the principal architect of the Portsmouth undertaking. However, when he undertook the engineering for the Horndean Light Railway, he resigned as engineer to the Corporation, only to be reappointed as Consulting Engineer at £150 per annum. His place as General Manager was taken by W. R. Spaven appointed at £300 per annum to rise to £350 in two years. This appointment was followed rapidly by that of Mr V. G. Lironi as Engineer. Both Spaven and Lironi seem to have been excellent officers, but unfortunately they found collaboration difficult. On 14 April 1923, the Committee resolved 'that the General Manager and the Engineer be informed that the Committee will not tolerate any longer the constant friction between them, but they give them one more and a last opportunity of agreeing on the division of their respective duties'. This was a rather sad commentary on the work of two conscientious officers who had served the Committee for over 20 years. In the event, they both remained, until reaching the age of retirement or later. Because of the closure of the generating station, it was decided to combine the two posts. There was a considerable saving, as they had commanded a combined salary of £1,650 whereas the new post carried a salary of £1,000 per annum, rising to £1,200. The successful applicant was Ben Hall, formerly manager of the Halifax tram system, who filled his position with distinction until his retirement in 1951. Although the replacement of trams by trolleybuses took place under his management, there is no reason to believe that he was in any way prejudiced against the electric cars. This is confirmed by his design and construction of a 'second generation' tramcar in 1930. It would seem that he was persuaded, perhaps with reluctance, that trolleybuses would serve Portsmouth better than a new generation of tramcars.

The General Manager and the Engineer were assisted by a few senior officials. For instance, in 1903 Mr Roscoe was appointed Assistant Engineer. Whereas administrative decisions were made at the top levels, the day to day operation of the system was the particular province of those at the second level. To ensure their availability at any time, in 1904 it was decided to install telephones in the private houses of Mr Gibson (Superintendent of the Power Station), Mr Roscoe (Assistant Engineer) and Mr Mumford (Traffic Superintendent). Because of the small proportion of officers compared to weekly paid staff, combined with the practice of appointment by open competition, there was little opportunity for internal promotion. However, Mr F. J. Prescott came to the undertaking as a driving instructor in 1901 and rose to be Chief Inspector by 1925. He then succeeded Mr Mumford as Traffic Superintendent, a post he held until his retirement in 1940. One reason for the smallness of the tramway bureaucracy was the availability of specialist assistance from other parts of the Corporation service. This included such requirements as legal advice and the finer points of accountancy. However, clerical staff were retained for basic financial activities such as checking the cash paid in by the conductors. During the period, between 1901 and 1936, the tram-

ways staff, rarely exceeding 1000 people, made a significant contribution to the living standard of the people of Portsmouth.

Tramways Committee

While administration was the province of management, the Tramways Committee particularly after the first few years of operation, concentrated on matters of general policy. All its resolutions had to be confirmed by the full Council, and occasionally, a resolution was overthrown, e.g. the first decision to open a shelter in the Town Hall Square. The minutes of the Tramway Committee were normally presented to the full Council by the Chairman, so his standing on the Council was significant.

The first meeting of the Committee took place on 22 April 1896, and initially the chair was taken by the Mayor. Councillor Power was elected Chairman, but five days later he resigned, and was replaced by Alderman Ellis. The reason for the rapid change seems to have been that Alderman Ellis was Chairman of the Electric Light Committee. The Committee included Alderman Emmanuel and Alderman Sir William Pink. In 1899, Alderman H. Kimber became Chairman, and remained so until 1907, when he was succeeded by the Vice-Chairman, Alderman J. H. Corke. Finally, from 1925 until 1937 the Chairman was Alderman Sir John Timpson. It will be noted that during the 'tramway period' there were only three Chairmen, and all were of considerable standing in the Council. The Committee followed a policy of 'good housekeeping' rather than political expediency, and was usually undisturbed by political debate.

Conclusion

For 36 years, the electric tram made a significant contribution to life in Portsmouth. This is not a long period in its history and many of its citizens who watched the last tram would have seen the first. However, in terms of millions of miles travelled by people in the cars, and the degree of convenience enjoyed and time saved, it is noteworthy. Towards the end, the aged trams, compared with the new motor buses, seemed to belong to the past. But in 1901, the new electric cars with their bright lights, passing through gas lit streets among the horse drawn traffic, represented a new era of technological innovation. They are worth remembering.

Appendix

Portsmouth Tramways and the Press

Aspects of the tramway services which were of interest to the public were well covered by the local press. While normal day to day operation was not news, items such as accidents or new openings were fully covered. For instance the accident at North End on Easter Monday, 4 April 1904, was reported as follows:

'Last night at 9.45 p.m., Tramcar No. 40 collided with a horse brake, owned by Mr Jones, which had been running all day between the town and Cosham. It was carrying 20 passengers. The collision occurred by Mr Burridge's Florist Shop at North End. The brake was proceeding towards North End, and the tramcar was travelling in the opposite direction. One person was killed and three severely injured. The car struck the brake on the right hand side, and the two seats by the driver were ripped off, the car left the rails. When it was eventually returned to the depot, the front rails were broken and covered with blood. The horses of the brake were tipped into the hedge'.[83]

On busy days, such as Bank Holidays, the horse brakes would ply in competition with the cars, sometimes picking up passengers from the crowds waiting at the stops. It was easier for them to use the centre part of the road, which was made up by the tramway undertaking with granite setts, although this did incur the danger of the wheels of the brake following the tram lines. This was almost certainly the immediate cause of the collision, although the fact that both drivers would have been at work for at least twelve hours may not have helped.

On a happier note, new openings were described in such detail as to preclude the quotation of a full report. For example, the openings of the three new extensions of 1913 were all covered at great length. The report on the new line constructed along Twyford Avenue to Alexandra Park began as follows: 'July 4th 1913 will long be remembered as a red-letter day in the history of the residents of Stamshaw and the district, it being fixed by the Mayor (Alderman J. H. Corke) and the Vice-Chairman of the Tramways Committee (Councillor J. Timpson) for the opening of the long-talked-of extension between the Recreation Ground and Commercial Road, and the interest taken in the event was emphasised by the big concourse of residents that turned out to see the first car driven through Twyford Avenue'.

After describing the special party and their journey to the gates of the Park the reporter commented on: '. . . The inevitable photographing ceremony – we pitied the photographers in their efforts, mostly futile, to keep back the "crowd" – was performed, and the company alighted from the car and proceeded to the bowling green pavilion, where Councillor Timpson had thoughtfully provided light refreshments to act as a digestive to the more formal proceedings which were to follow.'

These began with a detailed technical description by the Engineer, Mr Lironi, which included not only information about the track and the overhead wires, but also the fact

that during the construction period, from 6 January to 11 April 1913, 145 men, drawing £125 per week wages, had been employed. Councillor Timpson was toasted by the Mayor, and in his reply referred to the extraordinary rate at which the Stamshaw district had developed: 'of late years, and having a service of cars through it would, he felt sure, help still further to increase the value of property of this particular neighbourhood'.[84]

For the next opening, on 31 July 1913, the Mayor, Alderman Corke, who was also Chairman of the Tramways Committee, when the special car reached South Parade Pier: '. . . took, the *helm*, and the *course* having already been set he drove the car over the new section'. This was along Festing Road to a junction with the existing route along Highland Road. There was a stop for the official photograph and a near miss when, on the way back '. . . a young lady – probably a Suffragist – did her utmost to wreck the intentions of the Committee and His Worship's nerves by riding straight in front of the car when it turned out of Festing Road'. The party returned in the special car to the Banqueting Room in the Town Hall 'where felicitations usual upon such an occasion, were indulged in'.[85]

At the opening on 22 September 1913, the Mayor permitted Councillors Main and Stobie, who represented the local ward, to drive the special car over the new section between Milton and Eastney. At the reception, in replying to the toast of his health, the Mayor (Chairman of the Tramways Committee) pointed out that 'the Committee had already increased wages and bettered conditions, and it was hoped to do more in the future'.[86] It is unlikely that Councillor Timpson (Vice-Chairman of the Committee) would have anticipated that after only 23 years he would be driving Car 106, on the last day of tram service in Portsmouth.

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NOTE ON THE AUTHOR

Edwin Course's interest in transport began in the early 1920s when he lived between the entrance to the Royal Victoria Dock in London, and a railway shunting yard. The electric trams and the buses ran along the nearest main road. Since those days, although his interests have widened, transport and its history have continued to engage him. His writing on the subject has included the three volume *Railways of Southern England, London Railways* and *Portsmouth Railways*. He has been pleased to have the opportunity to write about part of Portsmouth's transport history – namely the electric tramway system.

ILLUSTRATIONS

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We are grateful to Mr J. C. Gilham, for allowing us to reproduce his map on page 16.

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1. *Portchester Castle* by Professor Barry Cunliffe, 1967 (Illus.) *Reprinted* 1970, and 1984.
2. *History of the Police of Portsmouth* by James Cramer, 1967 (Illus.), *Reprinted* 1983.
3. *'Palmerston's Folly': The Portsdown and Spithead Forts* by Professor A. Temple Patterson, 1968 (Illus.) *Reprinted* 1970, 1974, 1980 and 1985.
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5. *The Naval Mutiny at Spithead 1797* by Professor A. Temple Patterson, 1968 (Illus.) *Reprinted* 1978.
6. *Portsmouth Railways* by Edwin Course, BSc (Econ), PhD, FCIT, 1969 (Illus.) *Reprinted* 1972.
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